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TOBACCO in ONTARIO, CANADA

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Foreword

Some 95 percent of Canada's tobacco acreage is located in the Province of Ontario, where flue-cured is by far the most important type grown. In recent years Ontario flue-cured growers have introduced a number of new production and curing practices, including:

- A sharp increase in the use of soil treatment for nematodes before planting.
- Some growers now using chemical weed control.
- An increase in amounts of fertilizer used, plus advances in type and method of application.
- More growers equipped to irrigate their tobacco fields; refinements in the use of water.
- Chemical control of suckers approved conditionally for 1968.
- Several new developments in mechanical aids for harvesting, with improvements in hauling to the kiln or curing barn.
- Introduction of bulk-curing barns or kilns and better control devices for curing.
- Bulk curing, resulting in savings in the pack barn and strip room.

This publication, which updates FAS-M 145, *Survey of 1962 Canadian Tobacco Production and Trade*, describes these developments in some detail and also covers marketing and exports. Some mention of tobacco output in Provinces other than Ontario and of types other than flue-cured is included.

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TOBACCO IN ONTARIO, CANADA

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Tobacco Division

Acreage, Cost, and Yield

The production and marketing of flue-cured tobacco in Ontario is controlled by the Ontario Flue-Cured Growers' Marketing Board under the Ontario Farm Products Marketing Act. Acreages of flue-cured are rigidly allotted, and approved varieties must be used.

The growing of flue-cured tobacco in Ontario is a high-investment enterprise. Cash operating costs are large, and weather risks are exceedingly high. Growers particularly fear hail and early frost. The season is so short tobacco plants must be grown in greenhouses and transplanted to the field in late May or early June. Growers like to have enough extra plants in the greenhouses to reset their entire acreage if a late frost does kill their newly set plants.

A typical flue-cured farm in Ontario would have a Basic Acreage Allotment of 35 acres of tobacco. It would have at least six kilns and all the necessary machinery and equipment needed for growing the allotted tobacco acreage. It is not uncommon for such farms, without the machinery and equipment, to sell for \$75,000-100,000.

The financing of such an investment, along with the high cash operating costs, puts many growers under considerable financial strain when hail, frost, or other elements seriously damages the crop. Because of their extremely high labor costs and large tobacco acreages, Ontario growers in recent years have made fast progress in the use of labor-saving machinery for the production and handling of tobacco.

CANADA: Acreage of Tobacco by Type, 1956-1968

Type	Acreage		1965	1966	1967 ²	1968 ³
	Average ¹ 1957-59	Average 1960-64				
Flue-Cured:	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Ontario	116,383	107,141	86,870	117,471	128,117	122,086
Quebec	5,580	5,383	5,877	5,742	6,215	6,200
Other areas	50	435	776	923	1,031	1,500
Burley, Ontario	6,399	⁴ 2,946	1,939	2,796	2,422	1,579
Dark tobacco, Ontario	324	542	411	300	332	350
Cigar, Quebec	2,263	3,492	3,108	2,519	2,141	2,140
Pipe, Quebec	719	853	363	447	515	515
Total	133,015	120,787	99,344	130,198	140,773	134,370

¹ Three-year average. ² Revised. ³ Preliminary. ⁴ Four-year average; no commercial acreage allotted in 1960.

The average yield of flue-cured tobacco in Ontario has increased about 250 pounds per acre in the last 5 years when compared with the previous 5-year average. The average yield for the 1958-62 period was 1,504 pounds per acre, and that for the 5 years 1963-67 was 1,758 pounds.

The burley and flue-cured areas overlap in Essex and Kent Counties in southwestern Ontario. Both of these crops are being crowded out, particularly in Essex County, because the demand for commercial fruits and vegetables for the Windsor and Detroit fresh markets is increasing. Fruits and vegetables are also grown for processing. Crops that can be mechanized (low labor costs), such as corn and soybeans, are strong competitors, too.

The 30 year-old system of acreage allotments for burley was abandoned in 1968 on a trial basis following an approval vote at the 1967 annual meeting of the Burley Tobacco Marketing Association of Canada.

Until this year acreage had been pro-rated among 2,280 Ontario burley producers. Buying companies that have been purchasing Ontario burley contracted directly with growers for their 1968 (acreage) needs.

Production Practices

Ontario flue-cured growers have made steady progress in production methods and practices. They have been assisted by the Tobacco Research Station near Delhi. New varieties are tested and must be approved before they are grown commercially. The Tobacco Research Station makes specific fertilizer recommendations for typical soils where tobacco is grown. Recommendations are also made for insect and disease control. In 1968 it was estimated that 25,000 acres of tobacco land were fumigated for nematode control, compared with 15,000 in 1967. Spray equipment of various types are used. The "high-boy" type sprayers are now being used, particularly for applying sucker control chemicals.

The conditional acceptance of certain sucker controls for 1968 created more than usual interest in equipment for applying the sucker control materials. Application of sucker control sprays was costing \$8-10 per acre plus the cost of the chemicals. Maleic Hydrazide (MH-30) was never approved for sucker control in Ontario.

Fertilizers are being used in greater amounts. Growers apparently are careful to select them on the basis of soil characteristics and other conditions.

Applications of 1,000 to 1,200 pounds of 2-12-15, 2-14-16, or 2-12-16 per acre are common. These fertilizers are costing \$70-75 per ton. Many growers also use nitrogen and other fertilizers in some form at planting time and/or side dressing after planting.

Weed control chemicals are used by some growers. Two growers told the author that chemical control of weeds in the first part of the season was good, but by the end of the season weeds were as bad as in a normal year without chemicals. One of them said that he believed he would rather spend the same amount of money on hand-hoeing in the earlier part of the season.

Many growers use irrigation and one grower attributed the success of his 1968 tobacco crop to this practice. One grower reported that he irrigated his fields two to three times. His labor cost was \$7.50 an acre per application. An additional cost was about 75 gallons of gasoline used in a 16-18 hour period, but the gasoline cost would not all be charged to a single acre. Most irrigation water comes from farm ponds.

Heavy rains fell in early June soon after the crop was planted and some areas reported 3-4 inches in 2 days. One area had over an inch of rainfall on June 25 and no more until mid-August. When such extended periods of dry weather occur, irrigation is of direct benefit to farmers who have the equipment and use it.

The degree of fertilizer leaching varied considerably among fields, and growers tried hard to remedy the situation.

The Harrow Research Station, located in the burley area, assists those growers in production practices. It is conducting some interesting research in an attempt to determine the optimum temperature and humidity for curing Canadian burley. It is possible growers might want to move away from stalk-cutting and stalk-curing. Burley is now being grown on lighter soils than formerly, and fertilizer applications are heavier. One farm growing about 15 acres of burley (some of it new hybrids) was using 1,800 to 2,000 pounds of tobacco fertilizer; sometimes side dressing with nitrate of soda is used. Average yields on that farm ranged from 2,000 to 2,500 pounds per acre for several years.

Type	Production					
	Average ¹ 1957-59	Average 1960-64	1965	1966	1967 ²	1968 ³
Flue-Cured:	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
Ontario	157.0	177.5	154.0	214.7	195.9	215.0
Quebec	4.8	5.8	4.4	7.9	7.0	7.5
Other areas . . . . .	.04	.4	.8	1.2	1.4	2.5
Total	161.8	183.7	159.2	223.8	204.3	225.0
Burley, Ontario	10.2	⁴ 5.9	4.0	5.5	4.7	(⁵)
Dark tobacco, Ontario . . . . .	.5	.8	.8	.5	.5	(⁵)
Cigar tobacco, Quebec	2.6	5.0	4.5	3.9	3.1	(⁵)
Pipe tobacco, Quebec . . . . .	.7	.9	.4	.5	.5	(⁵)
Total	175.8	196.3	168.9	234.2	213.1	(⁵)

¹ Three-year average. ² Revised. ³ Preliminary. ⁴ Four-year average; allotted for burley in 1960. ⁵ Not available.

Harvesting and Curing

Ontario flue-cured growers are in the midst of mechanizing the harvesting operation.

Growers who have a large investment in present equipment, such as conventional kilns and tying machines, and especially those who have plenty of family labor to help with the operation, may be slow to spend additional money for mechanization. Growers who need new equipment and are forced to hire high-priced labor will likely examine the advisability of more mechanization and the use of bulk-curing equipment.

Growers have for years used an incline-plane type of conveyor to carry the "sticks" of tobacco up into the curing-barn or kiln. Another, and much later, development which caught on after 1960 was the tobacco-tying machines; these sew or stitch the stems of the primed leaves onto the tobacco sticks or lath, replacing the skilled hand labor formerly used to tie the tobacco on the sticks. Machines that help mechanize the pulling of the leaves from the standing stalk—called "priming"—are now a reality, and several different versions have been bought or made by growers. The machines now being used in Ontario assist the person actually pulling the leaves from the mature stalks.

Some of the tobacco growers who were interviewed during harvest in 1968 hesitated to claim that their 2-row "priming assist" or "priming aid" machines were actually cutting down the number of workmen needed. They did say they could utilize local help, particularly high school and college boys, who would rather work on a crew using a "mechanical harvesting aid" than the back-breaking old-fashioned method of "priming" leaves.

One of the interesting new machines that growers like is the "pony type" primer's assist or priming aid. Briefly, this machine is low and operates between the rows of flue-cured tobacco. It is self propelled, with self steering, and is powered with a governor-controlled gasoline engine. It carries two persons, one to prime the ripe leaves from the row on the right and the other to prime the leaves from the row on the left. Sometimes, two or more machines are operated in tandem.

When the leaves are pulled, they are placed in holders located directly in front of the primers. The holders are picked up at the ends of the rows and transported to the kiln. The machines, perhaps, do not save much labor, but

they save energy and do the job faster. Also, it is easier to secure seasonal help if the worker can ride while he works. Growers report that the machines cost about \$1,000. One grower says he made some for his own use at an average cost of about \$700 per machine.

It is believed that a pony-type priming aid similar to that now being used in Canada could be used on some U.S. flue-cured farms, keeping in mind that average acreages in the United States are much smaller and that some growers might not have family labor.

About 200 university students from France spent the summer working in Ontario's tobacco harvest. They had been recruited by the Canadian National Railway office in Paris. They began leaving the tobacco area September 18 for short tours before returning.

No camps for itinerant tobacco workers operated in the Ontario tobacco area this year.

A completely mechanized harvesting operation, using two-row high-boy type tobacco harvester, was visited. The harvester carried four senior high school or college boys as primers; two more on the top deck received the tobacco that was elevated from the primers. The two on the top deck placed the tobacco in bulk-curing racks (the tobacco was held in the racks by a bar with spikes and clamps). The filled racks were placed on a carrying frame holding 12 bulk-curing racks. The machine was self-steering except when turning at the end of the rows.

A man with a tractor met the harvester at the end of the rows and took (pulled) the filled rack, which had sled runners, to the curing area. There were seven bulk-curing kilns or barns which had been installed to make mechanization of harvest and curing nearly complete.

The tractor driver, working alone with a mechanical hoist, transferred one at a time the 12 filled bulk-curing frames to the bulk-curing kiln. Each of the frames, filled with the uncured tobacco, weighed almost 200 pounds. No other help was needed in filling the kilns, which reduced the need for workers at the kiln location. This particular operation, with the two-row high-boy priming aid coupled with the bulk-curing system, resulted in substantial savings in labor costs.

The bulk-curing kilns were doing a good job. The cured leaf drawn from the kiln was graded in the pack barn and baled in a small hydraulic press or baler. The humidifying equipment on the bulk-curing kilns can be used to raise the humidity following the curing operation so that the tobacco coming from the kiln is in "case" for good handling and pliable for grading and packing in the baling press. The bales were wrapped with kraft-type paper, tied securely, and stored, each bale weighing 60-70 pounds.

Use of the bulk-curing equipment brought substantial savings in labor. The grower stated that in the back barn, where five people had worked in the "strip" room, three could now do the job. The labor savings, particularly at the kiln, could be used in grading at the pack barn.

The bulk-curing kilns used in this operation cost about \$5,000, plus wiring. For seven kilns the total cost would be about \$38,000. A single electrical hoist was being used to fill the seven kilns; the cost was about \$250.

The average fuel cost per "kiln" of tobacco would not be known until the end of the season. The grower believed, however, that since the kilns were fully insulated, the fuel cost per pound of tobacco would be comparatively low.

Marketing

As mentioned earlier in this publication, Ontario's flue-cured tobacco is controlled by the Ontario Flue-Cured Growers' Marketing Board. The tobacco is auctioned in three warehouses using the Dutch Clock system of selling.

The organization that represents the burley growers is the Burley Tobacco Marketing Association of Canada.

In Quebec Province flue-cured tobacco is marketed by direct negotiations between grower and buying company representatives. The Tobacco Growers' Cooperative in Quebec plays a part in the sale of cigar tobacco.

In the Maritime Provinces tobacco is sold by a 1-day sale system in each Province.

Exports

Canada is the fourth largest exporter of flue-cured tobacco, following the United States, Rhodesia, and India.

Canadian export data does not separate the origin of exports by Province; therefore, exports include tobacco from both Ontario and the other tobacco-producing Provinces. However, less than 5 percent would come from Provinces other than Ontario.



Above, kilns of a type in use for many years are lined up facing a field of flue-cured tobacco in Ontario; left, new type of bulk-curing kiln.

Below left, four-row harvesting aid used in conjunction with bulk curing at work in a field of flue-cured; right, burley tobacco being hauled to the curing kilns.



Flue-cured constitutes the bulk of Canada's tobacco exports. Exports of flue-cured ranged from 35.6 million pounds to 41.3 million during the 3 years 1965 through 1967, representing 21-28 percent of total flue-cured production. The United Kingdom took 80-83 percent of Canada's exports in this period. Canadian tobacco receives the Commonwealth Preference, which was equivalent to 21.5 cents per pound before the United Kingdom devalued its currency.

CANADA: Average Export Prices of Flue-Cured Tobacco, 1963-67

Destination	1963	1964	1965	1966	1967
	<i>U.S. cents</i>	<i>U.S. cents</i>	<i>U.S. cents</i>	<i>U.S. cents</i>	<i>U.S. cents</i>
United Kingdom	78	76	85	98	110
Denmark	59	64	73	104	68
United States	44	32	59	79	52
Netherlands	40	35	48	54	40
West Germany	47	51	40	71	53
Trinidad and Tobago	67	66	66	70	88
Average price to all countries	77	73	79	95	104

Currently, about 2.5 million pounds of burley are used by Canadian manufacturers per year.

Canada's exports of burley tobacco have ranged from 4.7 million pounds to 8.8 million pounds during the last 5 years. Prices of burley exports, which averaged about 56 cents for 8 years, increased to 63.4 cents in 1966 and 78.4 cents in 1967. Information on the reason for the sharp upturn in prices, especially in 1967, is not available. The United Kingdom is the largest buyer of Canadian burley.

Canadian Exports of Unmanufactured Tobaccos by Kind and Destination

Kind and country of destination	Average 1955-59	Average 1960-64	1965	1966	1967
<i>Flue-cured:</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>
United Kingdom	26,753	31,648	32,536	30,475	34,971
British Guiana	364	179	162	272	128
Barbados	254	113	132	90	90
Jamaica	1,385	562	216	264	254
Trinidad and Tobago	1,356	606	126	705	1,030
Leeward and Windward Islands	10	6	5	39	7
Australia	1,288	502	52	181	51
Belgium-Luxembourg	228	608	529	116	122
Netherlands	751	542	418	376	603
Portugal	128	115	220	-	-
West Germany	1,906	2,561	332	906	713
Ireland	113	90	124	113	286
Finland	(¹)	72	175	40	382
Denmark	104	392	288	712	1,172
Norway	(¹)	179	307	67	-
United States	(¹)	834	680	391	816
Other countries	444	1,576	2,552	884	636
Total	35,084	40,585	38,854	35,631	41,261
<i>Burley:</i>					
United Kingdom	² 997	867	579	776	442
Netherlands	71	38	326	131	-
West Germany	³ 133	³ 593	594	770	-
Hong Kong	27	53	527	161	41
Norway	-	127	21	118	60
Portugal	-	³ 104	-	-	-
Denmark	(¹)	³ 41	25	-	-
Other countries	211	108	32	32	5
Total	1,439	1,931	2,104	1,988	548
Other unmanufactured	186	562	542	233	⁴ 1,100
Total	36,709	43,078	41,500	37,852	42,909

¹ If any, included in other. ² Exports occurred in only 2 years of the 5-year period. ³ Exports occurred in only 3 years of the 5-year period. ⁴ Includes United States, 809,000 pounds; Chile, 271,000 pounds.

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